MAY 19 1932

THE JOURNAL OF PHILOSOPHY

VOL. XXIX. NO. 10: MAY 12, 1932

CONTENTS

The Displacement of the Sense-Datum: D. S. MACKAY 253

On the Instrumental Analysis of Thought: CARLOS KLING 259

Epistemology and Symbolism: M. WHITCOMB HESS 265

Book Reviews:

Eaton's General Logic: JESSE V. MAUZEY 268

Smart's The Logic of Science: RAY H. DOTTERER 271

McKeon's Selections from Medieval Philosophers: LINCOLN REIS 274

Baruzi's Saint Jean de la Croix et le problème de l'expérience mystique. WALTER M. HORTON 277

Journals and New Books 279

Notes and News 280

PUBLISHED FORTNIGHTLY
BY THE
JOURNAL OF PHILOSOPHY, INC.

THE JOURNAL OF PHILOSOPHY

All communications to the Editors should be addressed to Professor FREDERICK J. E. WOODBRIDGE, or Professor WENDELL T. BUSH, or Professor HERBERT W. SCHNEIDER, Columbia University, New York.

Subscriptions and advertisements should be sent to THE JOURNAL OF PHILOSOPHY, Prince and Lemon Streets, Lancaster, Pa., or 515 West 116th Street, New York. The annual subscription price (twenty-six numbers) is $4.00 and the charge for single numbers is 20 cents. Advertising rates will be forwarded on application.

THE JOURNAL OF PHILOSOPHY is owned by The Journal of Philosophy, Inc., 515 West 116th Street, New York, and published at Lancaster, Pa. President, Wendell T. Bush; Vice-President, Herbert W. Schneider; Treasurer, Frederick J. E. Woodbridge; Secretary, Iris W. Wilder.

Entered as second class matter, March 18, 1921, at the Post Office at Lancaster, Pa., under Act of Congress of March 3, 1879.

A New Handbook on American Realism

Leaders and members of seminars in the study of realism will be pleased with the usefulness of

A BIBLIOGRAPHY AND GENETIC STUDY OF AMERICAN REALISM

By VICTOR E. HARLOW

The text of the book, with very little analysis or evaluation, contains information as to the literary and philosophical motives which resulted in the production of the extensive American literature on realism of various kinds which has appeared in the last fifty years. The bibliography, confined to American authors, contains both articles and books, together with references to the discussions and criticisms of them and thus leads directly and easily into the development of the movement. It is an indispensable handbook to anyone either leading or following through the complexities of the American realistic movement.

132 pages. Price $2.00

HARLOW PUBLISHING COMPANY
Oklahoma City

Vol. XXIX, No. 10. May 12, 1932.

THE JOURNAL OF PHILOSOPHY

THE DISPLACEMENT OF THE SENSE-DATUM[1]

THE purpose of this paper is to examine a certain kind of evidence commonly used in support of epistemological dualism. I shall try to show why, in my opinion, this evidence is not appropriate to the interpretation so placed upon it. With the validity of other kinds of evidence and other arguments I shall not be concerned. The following considerations are by no means intended to be a general disproof or refutation of dualism. For I trust that I have profited by Mr. Lovejoy's counsel to defer debate on fundamental issues until we have reached an understanding of what our different views may severally imply. "A great part of philosophy," as he says, "should consist of attempts to determine what sets of propositions, in certain fields of investigation, properly go together."[2] What I wish to determine is whether the propositions, descriptive of a certain class of perceptual situations, do or do not "properly go together" with the conclusions of epistemological dualism.

The kind of evidence I mean consists of situations in which there occurs what Mr. Strong has somewhere described as a spatial or temporal "displacement of the sense-datum" with reference to the object it is supposed to disclose. Familiar examples are the apparent convergence of parallel tracks in the distance, the mirror-image seeming to be located behind the glass, the elliptical image of a penny seen from a certain angle, the sound of a gun heard at an interval after it has been fired, and (assuming the finite velocity of light) the present appearance of a star in my vision as it existed in a more or less remote period in the past. These examples might be differently worded, but no one will deny, I suppose, that they denote actual states of affairs in perception. We may admit at the outset that there are manifest differences here between what Mr. Lovejoy calls the datum and what he calls the "cognoscendum," or real object. But does the "displacement" of the former support the interpretation for which the dualist contends, namely, as tending to prove the separation of what is intuited-as-given from what is asserted-as-known in our perception?

In order to put the problem in more explicit terms, let us take

[1] Read at a meeting of the American Philosophical Association, Pacific Division, December 28, 1931.

[2] *The Revolt against Dualism*, p. 257.

one of the examples of which Mr. Lovejoy makes frequent use in his argument and consider what precisely it is intended to prove in support of epistemological dualism. When you look at a star (so he argues), what you directly perceive as the star at that moment can not, on the assumption of the finite velocity of light, be the star as it exists (if it does still exist) at that same moment independent of your perception. For the light-rays, which now give in your vision the appearance of that particular spot of radiance in the heavens, must, according to scientific information, have been emitted from the star itself during some period in the more or less remote past. Hence, the content of your immediate awareness, the datum, has a different spatial and temporal reference from that which belongs to the body supposed to exist out in space as the real object of your knowledge. This leads to the conclusion which epistemological dualism seeks to establish: "that the datum whereby you know any (real) object is not identical with the object known."[3]

As Mr. Lovejoy is careful to point out, this argument is not to be confused with psycho-physical dualism or the question whether or not the datum exists as part of the same world as that in which the physical object is supposed to exist. The appearance or (to borrow Mr. Strong's term) the "presentment" of the star in your perception might be regarded as an event occurring under the same general laws of the physical universe which condition the real existence of the star. Or it might be supposed to occur under purely "mental" conditions quite apart from the physical universe. Upon either hypothesis, it would be possible to argue the strictly epistemological question of the relation between the datum and the object. "The historic fusion of the two dualisms," says Mr. Lovejoy, "may turn out to have been justified. . . . But we must not assume this in advance, the case for or against each of the defendants must not, because of that possible outcome, be entangled with the case against or for the other."[4] As I understand the problem, then, we are not entitled to prejudge the question of the identity or non-identity of the datum with the object of knowledge by any considerations drawn from an alleged bifurcation of nature into mental and material existence.

Thus, the essential point in Mr. Lovejoy's case for epistemological dualism is the denial of identity between the datum and the real object or *cognoscendum*. And this denial does not of itself entail the assertion of a psycho-physical dualism. Now, a proposition can be significantly denied in one of three different senses: (1) because it is absurd; (2) because, though intelligible, it may be false; (3) because it is merely irrelevant. If epistemological dualism meant the denial of identity in the first sense, it would require no argument,

[3] *Ibid.*, p. 303.
[4] *Ibid.*, p. 27.

since the denial of an absurdity is a self-evident proposition. As Mr. Lovejoy offers an elaborate disproof of theories which attempt to identify the datum with the real object, we must be supposed to understand his denial either in the second or the third sense. Clearly, it is not in the third sense, as being the denial of an irrelevant proposition, since he claims to be establishing some positive truth about the nature of knowledge. If, however, it is true that the whole question of identity is merely irrelevant to the class of evidence we are considering, then Mr. Lovejoy's arguments here for a dualistic theory of knowledge, based on the denial of identity or the assertion of non-identity, involve an *ignoratio elenchi.* For example, were someone to defend the moral integrity of a person's character by arguing that its interior angles were together equal to two right angles, or its specific gravity was proportionate to its mass, I should be justified in rejecting the argument as irrelevant. In so doing, I should not suppose that the contrary assertions conveyed any positive truth about his character. If I were to deny its moral integrity on the ground that its interior angles were *not* equal to two right angles, or that its specific gravity was disproportionate to its mass, I should be guilty of the same *ignoratio* as my opponent. When Mr. Lovejoy maintains that the datum is not identical with the real object in these cases of perceptual knowledge, he seems to be suggesting that their non-identity is a positive truth about the nature of knowledge in general, namely, that all knowledge is indirect or representative. I shall try to show that he has substituted an argument, depending for its force on *psycho-physical* dualism, for what is ostensibly an *epistemological* account of the relation between the datum and the *cognoscendum.*

What is the conception of identity which, according to Mr. Lovejoy, constitutes the issue between epistemological dualism and its opponents? Although he makes no explicit statement on this point, it is possible to infer the kind of identity in question from his discussion of the several phases of the "revolt against dualism." The identity in question is either that which obtains *between a whole and its parts* or that which obtains *between a substantive and its attributes.* Since the whole is equal to the sum of its parts, we say that there is a relation of identity between its different constituents; and since we can predicate various attributes of one and the same substantive, we say that there is a relation of identity among their differences. In each of these senses, epistemological dualism means not only to deny that the datum can properly be identified with the real object, but also to assert that their non-identity is a positive truth about the nature of knowledge. What is immediately presented in perception has no identity with anything which we may suppose to

exist as a *part* of the real object perceived, in the sense that a surface might be said to be identical with a part of a solid. And nothing which characterizes the content of immediate awareness stands in a relation of identity with any of the *attributes* of the real object, in the sense that the length of the radius is identified with one of the properties of a circle. Is it, we may ask, incumbent upon the critic of dualism to establish the identity of datum and object in either or both of these two senses? According to Mr. Lovejoy (and I am willing to accept his expert opinion on the subject), it is this very attempt that has been a principal factor in the contemporary revolt against dualism.

In the first phase of the revolt, the monistic realist had to prove that "the visual percept is identical with part of the perceived object, which is to say, also, that it is a true part of the material world," but his attempted proof is incompatible with the admission of the finite velocity of light.[5] In the second phase, we find the "objective relativist" insisting upon the relativity of attributes and the objectivity of relations. But he, too, in the person of Mr. Murphy at least,[6] wishes to prove that the datum "belongs" to a real object or event as an attribute or an adjective belongs to its substantive. "This attributive objectivity," Mr. Lovejoy assures us, "is the essential matter" for the objective relativist.[7] Turning to the next phase of the revolt we encounter Mr. Whitehead's doctrine that "perceptual objects" are "Aristotelian adjectives" of the events they qualify, and control "the modes of ingression of sense-objects in nature" by exhibiting themselves in relation to percipient events. Sense-objects (what Mr. Lovejoy would call "data") "only simulate adjectives for an observer who in his intellectual analysis of the situation forgets to mention himself." But this is simply grist for Mr. Lovejoy's mill. Finally, one of Mr. Russell's earlier positions is criticized as an attempt "to reduce perceptual content to identity with 'parts of the material world' which we have reason to believe, or can believe, to exist."[8] Appearances or "aspects" are regarded by Mr. Russell as actual parts, of the object, " 'in the sense in which a man is part of the human race'; and over and above the

[5] *Ibid.*, pp. 61–62.

[6] Who had written, in an article from which Mr. Lovejoy quotes, "The denial that qualities belong to existence is the denial of knowledge and rests on a quite obvious confusion of 'logical types.' An adjective never occurs in the same way as a substantive, and it is not possible to make either do the work of the other. . . . In general so-called sense-data are the characters which belong to events in relation to a human body." *University of California Publications in Philosophy*, 1926, pp. 202, 204.

[7] *Opus cit.*, p. 107.

[8] *Ibid.*, p. 206.

sum of the appearances there is no 'real' object."[9] It is safe to conclude, therefore, that the kind of identity which Mr. Lovejoy is anxious to deny is the identity of the datum with a real object, either as one of its parts or as one of its attributes.

With regard to the class of evidence we are considering, I fail to see how the "displacement" of the datum has any demonstrative value whatsoever concerning the identity or non-identity of the datum with a real object. In the context of the perceptual situation itself, I am unable to attach any genuine meaning to the statement that the "appearance" of the object is or is not a part or an attribute of the object itself. A situation is supposed in which an object, answering to a certain description, appears or presents itself to a percipient. It is further supposed that this appearance or "presentment" is also characterized after its own fashion. Thus, there is by hypothesis a round penny which appears to me in a way that I can describe as elliptical. What evidence is there in such a situation which could possibly enable me to say whether anything in the character of the appearance is or is not identical with this or that part, with this or that attribute of the object perceived? Unless there were some prior reason for supposing that a datum is a kind of *existence* having certain properties that are incompatible with the properties of the object, considered as another kind of *existence,* no question of their identity in either of the two senses could be relevantly asked or answered at this level of analysis. Mr. Lovejoy himself has rightly ruled out such an existential differentiation from what is a strictly epistemological inquiry. We are concerned with the *relation* between the datum and the *cognoscendum,* not with the nature of each as a separate event or existence. Now, the discussion of this relation in terms (*a*) of a whole and its parts, or (*b*) of a substantive and its attributes, seems merely irrelevant for the following reasons.

(*a*) In the given situations, it is implied that no discrimination of the object into its several parts has occurred. The *whole* object is supposed and the "displaced" datum is assumed to be the appearance *of* that object and none other. Since no specific part of the object is supposed to have been singled out for comparison *within the perceptual situation itself,* there is no evidence here to determine whether the datum as given is or is not identical with any part of the object.

(*b*) The relation between a substantive and an attribute is primarily a formal relation between the terms of a proposition. This presupposes interpretation of a given perceptual situation and the logical articulation of its meaning in the forms of discourse. It is

[9] *Ibid.,* p. 194.

a mistake to read these results of later analysis back into the "pre-analytical" situation in order to account for the conditions which make them possible.[10]

There is common agreement that, in all of these instances, the "displaced" datum is the way in which the supposed real object "looks," "seems," or "appears" under certain conditions of perception. Furthermore, it is agreed that these words "looking," "seeming," and "appearance" denote a relation between the datum and the object whereby the former *indicates* certain characteristics of the latter to a percipient. In Mr. Lovejoy's metaphor, the datum acts as "deputy" for the object. Let us call this relation between a datum and its object an *indicative* relation. It is exemplified in the relation between a symptom and the cause of a disease, between a clue to a crime and its perpetrator, or between a sign-post and a destination. We may recognize this for the unique and irreducible relation that it is without being committed to any theory about "the qualitative and existential identity" of the indicator and the *indicatum*. I am not saying that the datum may not *also* be related to the object as part to whole, that it may not *also* be predicated as an attribute in the terms of a proposition. Parts and attributes may on occasion be given as signs or indicators of the wholes and substantives to which they belong. But the consideration of these whole-part and attributive relations has no more to do with the nature of the datum in its "givenness" than has the material of a sign-post to do with its function as a sign. A lighted window indicates a house to a traveller at night, and in this case the datum happens to be a part of what it indicates. A footprint indicated the presence of another human being on Crusoe's island, although the footprint was neither a part nor an attribute of the man Friday.

In some sense, however, the datum *belongs* to the object which it indicates and it is the ambiguity in this notion of "belonging" which is mainly responsible for the controversy about their identity or non-identity. The notion of a *property,* based upon the subject-predicate relation in propositions, is confused with the notion of a *sign,* based upon the indicative relation in perception. In most instances, propositions about the character of the indicator have no logical identity with propositions about the character of the indicatum. We need not on this account deny that the former *belongs* to the latter in the only sense in which it can belong to it,—namely, as pointing to properties that can be assigned to it in subsequent judgments. Hence, the "displacement" of a datum should not be interpreted as its detachment or separation from the object to which it points. As we have noted, the question of its separate existence

[10] Cf. J. Loewenberg, "Pre-Analytical and Post-Analytical Data," this JOURNAL, Vol. XXIV (1927), pp. 5–14.

is irrelevant to the description of the datum as such. The "displacement" is a discrepancy among the suggested *meanings* of the datum as a sign, not a disjunction among the assigned properties of the object as signified. It is indicative, not predicative. The possibility of error and failure to read indications aright merely shows that the meaning of what is given in perception is always more or less tentative and problematic. In cases of spatial and temporal "displacement," this aspect is more striking than usual because the data indicate conditions in the perceptual situation which we do not habitually take into account in forming our judgments about the objects. There is, so far as I can see, no genuine problem here concerning the *identity* between a "subjective" datum and an "objective" existence. The epistemological problem has to do rather with the nature of *identification*, whereby the tentative, incomplete meaning of the datum as a sign gets established or rejected in the total meaning of the object as interpreted in subsequent judgments.

D. S. MACKAY.

UNIVERSITY OF CALIFORNIA.

ON THE INSTRUMENTAL ANALYSIS OF THOUGHT

PROFESSOR Dewey's analysis of reflective thought is viewed by a great many educators as an actual psychological one; that is, the five "stages" are taken to be temporal developments in the process of solving a problem. This view, however, may not be attributed to Professor Dewey. In answer to a criticism made of the analysis by Mr. Buermeyer,[1] who took the analysis to be a psychological one, Professor Dewey disavows such an interpretation.[2] But he argues for retaining the analysis to distinguish certain "logical" movements of thought. Now one may readily accept the general instrumental theory, which theory holds that the subtle intra-organic processes called ideas are a set of tentative trials whose function in problem solution is an economical substitute for overt motor trials. But further analysis, which yields the finer distinctions of five separate "stages" in the process of thinking, does not share, and is not claimed to share, in this practical basis. The stages are admittedly not an actual methodology. They are only a "logical" analysis, the nature of which will be later described. And it is against the value and validity of these remaining "logical" distinctions that the writer makes so bold to argue. The value of the

[1] Laurence Buermeyer: "Professor Dewey's Analysis of Thought," this JOURNAL, Vol. XVII, p. 673; hereinafter referred to in the context as "B."

[2] John Dewey: "An Analysis of Reflective Thought," this JOURNAL, Vol. XIX, p. 29; hereinafter referred to as "D."

analysis is waived with the renunciation of the applicability of the analysis to practice; if we are to follow the first principle of pragmatism as set down by Peirce and James, we must question all logical distinctions which do not ground themselves in practical results. And the validity of the analysis is contested by arguments to be submitted against the "logical" distinctions which Professor Dewey retains. It is here recommended that the distinction of ideation as a tentative trial, in contrast with the final motor testing as the end-result of problem solution, is the one incontestible logical distinction which describes an actual division of labor, that this division of labor has its origin and grounds in far simpler behavior mechanisms, and that this distinction should be emphasized rather than any detailed minor distinctions which may be suggested.

The first "step," which is the occurrence of a problem, Professor Dewey admits not to be a "stage," but only the occasion of thought, and says that, "Not even the occurrence of a problem need come absolutely first in time" (D—p. 30). The second "step" was put in *How We Think* for pedagogical purposes, merely as a precautionary measure against the acceptance of irrelevant suggestions. "This 'step' is not however different in critical thinking from the step of a tentative or hypothetical adoption of a suggestion" (D—p. 32). And in critical thinking, he says, "I accept not merely Mr. Buermeyer's criticism of temporal separation of steps, but his conclusion regarding the fusion into one process of induction, deduction, and experimental testing" (D—p. 30). Thus, with one exception, is all distinguishing of "stages" relinquished. This exception is a "logical" distinction, and it is held between the third and fourth "movements" of thought. He maintains that, "the more we become aware of the identity of psychological process, the more the difference in function becomes significant" (D—p. 37). To establish this "difference in function" between these two movements is Professor Dewey's fundamental argument. On the contrary, it is the writer's contention that the practical and valid distinction of movements in problem solution is not this one claimed between these two movements, but a distinction between a general ideation process on the one hand (which may not well be divided up into a first, a second, a third, and a fourth stage), and on the other hand a confirmatory process of motor testing (which would correspond to Professor Dewey's fifth stage).

In support of his logical distinction Professor Dewey makes the following arguments: The third stage is induction, and the fourth stage is deduction. The traditional distinction between induction and deduction is that they are, respectively, movements from the particular to the general and from the general to the particular.

He rejects this distinction, however, and says: (1) "Induction I take to be a movement from facts to meaning; deduction a development of meanings, an exhibition of implications" (D—p. 30). "Just as induction employs selected matter-of-fact information in forming a hypothesis, so deduction employs a system of previously formed conceptions or meanings or relations" (D—p. 36). (2) A second discrimination seems to be that inductive suggestions are uncertain; they do not have the obvious rôle of subsumption as an example under a rule, and they are applied to new situations rather than to old and therefore determined ones (D—pp. 34–35). (3) Another argument is that since hypotheses are often contradictory, they can not be "deduced" from the same situation or "grounded in identical premises," but "are suggestions springing from different sources" (D—p. 35). Finally, (4) the distinction between the two logical movements is one of logical purpose; it "concerns the results of process." "A man may go from New York to Chicago and from Chicago to New York upon the same tracks, in the same car and with the same engineer. But the purpose, the outcome is different" (D—p. 37).

Attention should first be called to an ambiguity in the general use of the term "deduction." In may be (*a*) simply rule-of-thumb subsumption of cases to orders already established, or (*b*) the original working out, developing, and organizing of the orders themselves. Both Mr. Buermeyer and Professor Dewey agree that the former is not genuine deduction. "Either the implications are unfamiliar, and must be unrolled tentatively, with constant reference to the conditions to be met; or they are familiar, a matter of routine, and then explication is the work of habit or mechanism," says Mr. Buermeyer, and the latter operation "could conceivably be turned over to an adding machine" (B—p. 680). And Professor Dewey says in agreement that, "while the development of a content of a hypothesis uses these types of order, it can not be identified with them, since it is partial or selective" (D—p. 36).

Though induction and deduction are admitted not to differ in actual psychological process, they are said to differ (4) in purpose, outcome, or result. Just what this difference in purpose might be is not defined by Professor Dewey. Hence, one may well ask, Is not the purpose of all reflective thinking and all its steps stated to be the solution of a problem, and is not every "step" directed toward this end? Suppose the purpose of induction to be the discovery of ideas and the purpose of deduction to be the elaboration of ideas. Then we must go further and ask, What is the difference between discovery and elaboration? The answer is that discovery proceeds from fact-to-idea, whereas elaboration proceeds from ideas to further

ideas. This answer, however, takes us back to the first argument; that is, in this case argument (4) reduces to argument (1), which will be considered later.

To assume the purpose different and the movement identical is only an assumption; it is just as likely that the opposite be true. Using Professor Dewey's own illustration, we find that a man may go both to New York and to Chicago seeking the same end, say medical treatment, and traverse any number of different routes. Thus also in reflective thinking the problem may remain constant and the purpose to solve it the same, while the method of approach may be varied indefinitely. Of all possible variants in problem solution, the purpose should be the most constant characteristic of every step.

The case (3) in which Professor Dewey argues that hypothetical suggestions may be and usually are contradictory, and that contradictory conclusions can hardly be deduced from identical premises, is readily met. For since the "identical premises" of the "problematic situation," in so far as the situation is problematic, have contradictory elements,[3] it would be strange indeed if the suggestions could be other than contradictory. And does Professor Dewey mean to argue that the mark of a deduction is its validity? Then what would become of false deductions and true inductions?

Argument (2) was that induction does not have certainty; it lacks the validity of subsumption. We have seen, however, that both Mr. Buermeyer and Professor Dewey agree that rule-of-thumb subsumption is not deduction. Consequently, there must be found some other mark to describe deduction as contrasted with induction. Also, to say that only inductions apply to new situations is to imply that deduction does not apply to new situations and to the problematic thinking which they generate. Finally, there is the implication that only deductions can be relied upon to give us certain truth and that inductions lead us only into speculation and not into knowledge. This implication, however, would seem to defeat the fundamental intent of the instrumentalistic movement.

This leaves us with the prime distinction, to which other arguments tend to reduce themselves. To evaluate this we must turn to Professor Dewey's instrumental definition of fact and idea. It is a fundamental thesis of instrumentalism that fact and idea are not to be differentiated in themselves as ontologically different, that neither is a privileged or final category of reality; they are *functionally* different, according to their *relative use* or *purpose* in an act of thought (E—Chapter II). "What is insisted upon is the relative, instrumental, or working character of the distinction—that it *is* a *logical* distinction, instituted and maintained in the interests of

[3] John Dewey: *Essays in Experimental Logic*, p. 53; this volume hereinafter referred to in the context as "E."

intelligence, . . ." (E—p. 237). To the degree then in which elements of the problematic situation are inductively significant they will have a provisional nature, and to the extent in which a given element is held to be provisional, it has to that extent the rôle and the nature of an idea (E—p. 225). Hence, if inductions come from elements of a provisional, problematic nature, and if such elements in the thought situation are what we mean by ideas, how do inductions from idea elements differ from the deductive movements, which are described in the same way? That is to say, if inductions are found to spring from the elements of the thought situation defined as ideas, how do these inductions differ from deductions? The argument can be put in a form which approximates an enthymeme:

Induction is a movement from provisional elements to ideas;
Provisional elements for the objective instrumentalist define ideas;
A movement from ideas (or provisional elements) to other ideas is the development of ideas;
And the development of ideas is the definition of deduction.

Finally, it can be shown that problems *begin* with ideational activity; one must think before one has problems. Simple pain or displeasure does not define the occurrence of a problem; some intelligent thought is required from the first to know what is wrong, to recognize and describe a problem. The term means not a physical but an intellectual frustration. Hence, inasmuch as thinking does not start with facts but with ideas, how can we say that inductions spring from facts and that deductions do not?

The purpose of the writer is not to confuse into one unanalyzed process all logical developments of thinking. Rather, it is to emphasize certain valuable distinctions that instrumentalism has already made. What is here suggested is that we have a more fundamental division of labor in the problem-solving process, namely, a division in labor and significance between the step of *hypothesization,* taken in its entirety as a tentative trial, and the step of *confirmation* or testing as a final or consummatory trial. Dividing up the process of hypothesis-making into two stages (the occurrence of suggestions and the elaboration of suggestions) seems to be a secondary, hair-splitting division as compared with the primary and more obvious difference found between a tentative trial and its confirmation in action.

How might we then distinguish idea from fact in such a manner as to avoid the implicit circle found above, yet in such a way that we might keep a division of labor for our two steps in thinking based safely upon it? Professor Dewey himself gives us elsewhere the definition we need: "Images are not made of physical stuff. They are qualities or *partial* organic behaviors which are their 'stuff.' They

are partial because not fully geared to exteroceptor and muscular activities, and hence not complete and overt."[4] Here we have ideas, as organic responses, marked by their partial nature, which serve to distinguish them from fulfilled responses. The conceptual is hence not properly opposed to the factual, for the latter is simply a broader category covering more phenomena than organic responses; but rather it is distinguished from the fulfilled or overt response. And it is precisely this distinction which underlies the difference in function between the act of hypothesizing and the act of testing or confirming. Thinking is begun by means of tentative, more economical substitutes for actions. But thinking is consummated pragmatically; it is tried out and fulfilled in overt actions. Hence we get two main divisions of labor for problem-solution, and we have two corresponding logical functions for them. The first is an ideational movement, and its function is that of a tentative trial, a preliminary and economical exploration; the second is the *act*-ual movement, and its function is that of confirmation, or in many cases, consummation.

There is a growing body of evidence demonstrating the existence of response mechanisms whose nature is that of a trial adjustment and whose function and biological significance is one which is purely preparatory. Such overt but purely preparatory responses assume the same rôle and function in animal behavior as ideas do in human behavior, and they give us some insight into the origin and nature of these partial responses which we call ideas. It is the existence of these preparatory responses which makes possible a significant division of labor among overt muscular responses themselves similar to that described by Professor Dewey in human thinking. We find Pavlov, for instance, describing and experimenting with what he has termed an "investigatory reflex," a complex bodily response of orientation with sensory and motor exploration, a response whose function is purely preparatory.[5] It is a response which is tentative and which is often hinged upon a consummatory response of pursuit, retreat, or alimentation. This sort of preparatory response is found almost universally. In the primates we have an elaborate set of manipulatory responses; the animals are continually trying out things, pulling them to pieces, observing them, pushing them about, tasting them, and exploring them. We have both motor or manipulatory explorations and sensory explorations, both of them being purely "intellectual" in that of themselves they do not supply a physiological need and hence have no significance taken by themselves. They serve as problem-solving activities; they

[4] John Dewey: *Experience and Nature*, p. 291, Open Court Publishing Co.
[5] I. P. Pavlov: *Conditioned Reflexes*, 1927, Oxford University Press.

are the original *motor ideas,* for it is such a repertoire of responses, directed upon some key feature of a problem situation, which copes with the situation and which eventuates in some final consummatory response such as eating or mating. The recent work of Raymond Dodge [6] supplies some excellent studies of certain simple muscular responses which upon analysis yield, within the one response, a preparatory phase introducing a second phase which we may take the liberty to call confirmatory (Chapter VIII). That is to say, we find not only a set of responses functioning as preparatory for another entirely different set of responses but also, within the same set of responses, one movement preparatory for another. For instance, in the pattern of ocular pursuit of a moving object, there are two kinds of responses: first, the quick saccadic eye movements which progressively approximate the position of the moving object, and then the second form of pursuit which is a smooth glide. If the oscillating object is moved more rapidly, a series of quick saccadic movements tend to replace the glides; and finally, if the oscillations are accelerated still more, both the glides and the saccadic movements are replaced by still fixation. Such examples as these indicate that, though the more detailed analysis of problem adjustment and solution be open to criticism, the two main functional divisions of labor do stand, and they may be traced all the way back to the investigatory and preparatory responses of animals to a still simpler presentation in responses such as reflex eye movements.

CARLOS KLING.

UNIVERSITY OF TEXAS.

EPISTEMOLOGY AND SYMBOLISM

A RECENT theory of knowledge based on mathematical logic claims for itself a distinct advance over past theories just in its consideration of the theorems of logic as rules for tautological transformations. We fail to see how it is possible to develop anything of a sound epistemology along these lines. How can the tautological structures or equations be considered as prelimiting the propositions when they are discovered by a special sort of controlled experiment, that of attenuation of propositional meanings? And, since it is only in returning to the proposition its abstracted numerical content whose infinite nature renders true definition impossible that the tautology is given point and purpose, does not the logical positivist instead of combining empirical facts with true logic forms just come back to the proposition he started from?

[6] Raymond Dodge: *Conditions and Consequences of Human Variability,* 1931, Yale University Press.

There is this point also in regard to the logical positivist's account of the union logic makes with experience. What appreciable difference—we are concerned now with logical positivism's claim for novelty of interpretation—is there between the infinite regress Aristotle believed he discovered in the fact of a resemblance existing between the Platonic Idea and the phenomenon, and the unending hierarchy of similarities manifest in the theory of a structural similarity operative between the relations of elements in a fact and the relations of words in a proposition? The similarity, we are told, can not be expressed by the same language, but would require a further proposition in possession of a similarity between it and the similarity. And so on with a higher general above both *in infinitum*. The father of logic, by the way, wholly condemned the resemblance theory for its contradictory implications; the logical positivist on the other hand holds uncritically his similarity-of-structure theory admitting, however, that it carries with it the notion of an infinite series. So though there is little difference in the infinite regress itself there is evidently a real difference between Aristotle's logical forms and those accepted by the logical positivist.

The reduction of propositions to structural tautologies is the result of abstracting from the propositions in question everything but their quantitative relationships, and thus by the fact that our simplest integral apprehension *is* numerical in character the equations really do represent the very outposts of meaning. But is there not both fallacy and mischief in taking these resultant equations for representations of actual propositional forms? The fallacy, as will be shown immediately below, appears in the idea that mathematical symbols have a possible reference to living language. These symbols are the result of a double abstraction which has pushed their original points of reference to a remote background—so remote in fact that for practical purposes they are lost sight of altogether. And the mischief to be found in taking the equational reduction for true representation of the proposition appears in the suggestion that attenuation of knowledge-content exhibits knowledge-form.

The laws of language are prohibitive of such interpretation, i.e., of the equation representing propositional structure. So far from simplifying the structure of the proposition for purposes of convenience for study, the use of symbols for terms actually results in a new complex to be taken care of. For there is a duality in language itself which is analogous, and not identical, to that of knowledge. Corresponding to immediacy and demonstrability (or knowledge by acquaintance and knowledge by description) as sides or aspects of knowledge, language shows either a predominant contextual aspect or a predominant referential aspect, according to whether the in-

terest is in the content or in the method; and in all active language both the contextual and the referential sides are present in varying degrees of explicitness. Contrary to some popular beliefs the learning of a foreign language is far from being a mere mastery of new symbols or word-references. The modern foreign-language teacher who stresses too much the referential side of language by strict dependence on translation is guilty of ignorance of the vital function of context; but the one who sticks exclusively to the direct method in his teaching whereby the contextual side of language is overstressed errs as much on the other side. The skillful instructor, whether he has gone into the philosophy of language or not, combines the translation and the direct method because he sees that this combination produces the results he is after. The old lady who disgustedly gave up her study of French because it seemed to her too absurd to refer to an apple as a "pomme" is on a par with the farmer who discovered that "the Lord was right when he named hogs." Neither one saw the respective English words "apple" and "hogs" as having *both* referential and contextual sides; both the lady and the farmer had evidently made mental reservations of context for "apple" and "hogs" which were stressed to the exclusion of their referential value. But while the former could not discount the arbitrary character of the French symbol for "apple" the latter could not see beyond some contextual aspect of "hogs." For in ordinary usage language forms are taken without question for the content involved in their contexts. The moment, however, that method or reference is brought under consideration the language form is treated as referential or symbolic. Accordingly the symbols used in mathematical logic are not counters for propositional terms, though to the uninitiated they may appear to be. They are actually only counters for word-symbols for propositional terms. In the translation of meanings or contents into any symbols whatever the arbitrary character of these symbols must be discounted by explicit reference to their originals every step of the way. But in the case of the mathematical symbols used in equational logic, explicit reference to the propositional terms they are derived from is made impossible by their double remove which does not and can not take account constantly of the original meaning relations. For this reason these counter-symbols take on the character of significants in their own right. Since they are themselves language forms they must find their required meaning reference elsewhere—as they do find it in pure mathematics.

To be sure, the adventure into mathematics by way of the proposition is fascinating. But does it really tell anything about the proposition that could possibly be of revolutionary import to the

epistemologist? Instead of being formulae for the construction of propositions is it not true rather that the equations of mathematical or symbolic logic only signify new meaning departures from given propositions which have their sole motivation in the particular interest of the investigator?

M. WHITCOMB HESS.

OHIO UNIVERSITY.

BOOK REVIEWS

General Logic. RALPH M. EATON. New York: Charles Scribner's Sons. 1931. Pp. 630.

Professor Eaton has chosen for this text a singularly appropriate title. The book discloses a variety of meanings for the casually ironic ambiguity of its being called "general" logic. The generality might apply to the readers; it is definitely published as an introductory text, but ought to be, in parts, of considerable interest to the specialist. By characterizing the book as a "survey" the subtitle calls attention to its inclusiveness. However, there is nothing of the vague approximation to precision that is commonly found, and hence expected, in most works that boast of being "surveys." The author has taken particular pains to omit no pertinent field within the expanding domain of logic. Finally, the adjective "general" is justified by Professor Eaton's conception of the nature of logic and his method of presentation. The discussions are concerned with principles, as such. There is no effort to describe an applied logic, or to show how the use of logic may lead to glorious results in the sciences. Too often the teaching of logic is hampered by the wealth of arresting (but diverting) illustrations that the writers of textbooks borrow from each other and fish out of their private collections. Professor Eaton is not unduly stingy with illustrative material, but what he includes is simple and often repetitious. After all, the old stand-by "all men are mortal" is about as good as any other proposition; it can be put to many uses, and its material implications are not entirely irrelevant.

Logic is defined as "the science that exhibits all the relationships permitting valid inference that hold between various kinds of propositions considered merely in respect to their form" (p. 8). This definition is the core of a rather long (70 pages) but unusually adequate introductory section in which the expected textbook variations on the theme, "logic is something that goes on in our heads," are considered and discarded. Logic is neither a normative science, an art of valid thinking, nor a branch of psychology. Its subject-matter is not the judgment but the proposition, for judgments are never

true or false; they simply are what they are (psychological processes). That a realistic account of logic suggests delicate and difficult philosophical questions Professor Eaton admits, although he does not find it advisable to side-track the student by discussing them.

It seems that what is often called "conscious and deliberate thought" is seriously in need of a new realm of inquiry in which to hide itself. The realistic logician sends it to the psychologist, but the behaviorist will have none of it, and the psycho-analyst treats it as the dubious child of rather nondescript parents. Even the logicians whose prefaces are much concerned with thinking soon find that objects are more amenable to logic's laws.

However, it is in terms of logic defined as a science of structure that Professor Eaton encounters and deals with logical difficulties. The problem of the *petitio principii* fallacy in the syllogism, especially in connection with Mill's contentions, receives a notably able consideration, in which the author maintains that Mill's objections are based on (1) an erroneous conception of the nature of a general proposition, and (2) a confusion between logical relations and the extent of our knowledge. The question of the validity of the traditional forms of immediate inference is developed as one phase of the problem of the assumption of instances in universal propositions; other aspects of this problem receive a detailed examination in various parts of the book. The concept of the null-class, frequently employed, becomes a basic point of departure between the traditional criteria of validity and the revised notion of implication required by mathematical logic.

Section II treats of the traditional Aristotelian logic much more fully than any other recent text (280 pages). The plan is to present the syllogism and other types of inference in the usual way, and to discuss separately the problems to which each type gives rise. Reduction of other figures than the first to the perfect figure is described in detail. Following this there is a well ordered treatment of the antilogism, patterned after Mr. C. I. Lewis's exposition of Mrs. Ladd-Franklin's method. A rather large amount of space is devoted to a highly involved account of the classification of terms, which, like most treatises on the subject, affords little illumination. After asserting that the study of fallacies does not belong strictly to logic, Professor Eaton justifies his excellent treatment of them as "types of oversight" by saying that they tend to throw actual logical structure into high relief.

Part III, on mathematical logic, follows the plan of Whitehead's and Russell's *Principia Mathematica* with, of course, considerable simplification. It contains an outline of the calculus of propositions,

the logic of propositional functions, and the class calculus, sufficiently complete to produce, in the conscientious sophomore, a mild insomnia that should last him the better part of a semester.

Professor Eaton's treatment of mathematical logic is valuable for its demonstration of the connections between the traditional syllogistic procedures and the logical developments of the last seventy-five years. In the calculus of propositions, for example, it is shown that the proposition (25) $\vdash :p \supset q \cdot q \supset r \cdot \supset \cdot p \supset r$ is analogous to a syllogism in *Barbara,* and furthermore, that the proof of the proposition involves the same principles that produce *Barbara* as a valid syllogism (pp. 375–376, 381). Again, in the class calculus, considerable attention is given to showing that unquestionable syllogistic moods fall under formulæ of the logic of classes, whereas the questionable moods (those which draw a particular conclusion from universal premises: *Darapti, Felapton,* etc.) require the assumption of instances, a principle not necessary to the class calculus.

In addition to its being a thorough textbook exposition of the content and procedure in mathematical logic, this section supplies the need for a precise rationale of the genuine connections among traditional logic, pure mathematics, and symbolic logic. The securing of both of these values is facilitated by the introduction of simpler symbolic procedures fairly early in the first sections of the book. This has, of course, a definite teaching advantage; the student is rather gently courted at first, his taste for symbols becomes stimulated, making his debut into the calculi neither a cold shower nor an irrelevancy.

There are a few instances in the presentation of the calculus of propositions where it seems that sufficiency has been somewhat sacrificed to keep the survey from becoming too long. Proposition 18 (the numbering differs from that of the *Principia Mathematica*) is stated $\vdash :\cdot p \cdot \supset : q \cdot \supset \cdot p \cdot q$ (p. 380). The preceding demonstrations have indicated that later propositions can be proved in terms of earlier propositions and definitions; this proposition, however, requires for its proof another proposition that occurs in the Appendix as Proposition 29 (p. 607), although the calculus ends, in the text, with Proposition 28. To make the situation still more confusing, the author says (after stating Proposition 18), "we omit the proof of this principle [18], but it is interesting to see how it must be used in the demonstration of 17."

Following a very brief summary of the theory of logical types and a discussion of the relation of logic and mathematics, Part III ends with an excellent bibliography of the more easily available works on mathematical logic.

"The study of the logic of induction is not the study of the de-

tails of scientific technique'' (p. 481). The author's consideration of induction (Part IV) is based on this premise, and while it includes most of the material one might expect (Mill's Canons, probability, analogy, etc.), it forms a somewhat minor part of the text. Except for a careful analysis of Mill's ''Canons of Causation'' the most interesting discussions are concerned with the nature of induction itself. For logic, at any rate, induction, when distinguished from inference, is, as Mr. Bertrand Russell says, ''a mere method of making plausible guesses.'' Summarily stated, the problem of induction is ''to find a way of showing that the general conditions of some system are fulfilled by a set of particulars assumed to belong to the system, when it is not known that these are all the particulars in the system'' (p. 484).

Professor Eaton's book is, for the most part, truly admirable. As a text it provides probably the only really ''general'' logic available. As an introduction to logic it is an ambitious project; if it turns out, occasionally, to be an introduction to metaphysics as well, the meeting is unlikely to take place at the tradesmen's entrance.

JESSE V. MAUZEY.

ST. STEPHEN'S COLLEGE.

The Logic of Science. HAROLD R. SMART. New York: D. Appleton and Company. 1931. Pp. vii + 237.

Mr. Smart's ''logic'' is not a compendium of rules for the attainment of truth. His ''science'' is not a quest for any value except truth-value. His ''philosophy'' is somewhat disdainful of cosmological inquiries, and may almost be identified with logic. Mathematics is not a purely deductive science dealing with non-experiential relations, but is a science of quantity, in many points requiring inductive procedure and possessing significance only so long as it maintains contact with empirical reality. The realm of the real is greater than that of the existential (the reviewer doesn't know what this means), but science deals only with the latter. The physical sciences, after passing through a stage of rather futile attempts at explanation by means of classifications based on qualitative resemblances and differences, are now engaged in the more fruitful enterprise of looking for laws. On the other hand, the biological sciences should not presume to become domains of causal law, but should make it their chief work to discover natural kinds, which are gradually undergoing modification.

Apparently the physical sciences are to be delivered over to Democritus, while the biological sciences are still to render homage to Aristotle (p. 120). The concession that natural kinds are not fixed, but are undergoing modification, would seem, however, to

make the rule of Aristotle, even in the latter realm, somewhat shadowy. This contrast between physics and biology—a rather surprising contrast, in view of the actual goals and procedures of contemporary biologists—is made in the interest of the autonomy of the sciences, or at least of the several groups of sciences. Physics, biology, psychology, etc., should each insist upon the possession of problems and methods of its own; and philosophy, in turn, should maintain its independence of the sciences.

"A real synthesis of the sciences," says Mr. Smart (p. 214), "must acknowledge the relative independence of each science, and in particular must not require of it a contribution to some mythical cosmological system." But why stigmatize the proposed cosmological system as mythical? Are we to understand that all cosmological systems must in the nature of the case be mythical, and that cosmology accordingly has no proper place in philosophy? Or is the search for order, harmony, beauty, for a cosmos beneath or behind apparent chaos, to be carried on under some other name? In view of the history of thought, it seems too much to expect that philosophers will henceforth forego the satisfaction of system-building; and if systems are to be built, one would suppose that the only way to escape from mythological constructions is to insist upon checking and testing all proposed cosmologies by reference to the results of systematic and painstaking investigations, in whatever fields these have been carried on by men who are zealous for the attainment of truth. In other words, just as the generalizations of any particular science ought to be treated as hypotheses which stand or fall in accordance with their agreement or disagreement with the relevant facts, so the constructions of the cosmologist ought to be treated as hypotheses which stand or fall in accordance with their agreement or disagreement with the results arrived at by the special sciences.

This, however, may not be far from Mr. Smart's own view of the relation between philosophy and the sciences. Unfortunately, he has not developed the topic as fully as might be desired, but has contented himself almost entirely with negations. Perhaps all that he really means is to protest against taking some one science and treating it as if it were the whole of philosophy. And this "fallacy of idealization," as he calls it (p. 198), has indeed been entirely too prevalent. It must be admitted that certain philosophers have shown a tendency to seek the explanation of all things in terms of some principle or theory which happened to be fashionable at the moment in one or the other of the sciences. Thus nineteenth-century thinkers, under the spell of "evolution," often supposed that everything could be explained by giving an account of its history; while

many contemporary thinkers, under the spell of "relativity," seem to be trying to mathematicize everything and anything.

Nevertheless, much as we may sympathize with the protest against such "idealizations," it remains clear that the only way to determine whether ideas which have been found fruitful in some one department of thought will or will not be fruitful elsewhere is to try them out. In each case, someone must be permitted to extend the application of the idea as far as he can. To what extent a given "science" will be found to be autonomous—Mr. Smart is careful to speak of only *relative* independence—is a question for empirical determination, and not for dogmatic assertion *a priori*. Assuredly, there is nothing sacrosanct or even logically necessary about our current division of labor among the special sciences. There is obviously no sharp line between astronomy and physics or between physics and chemistry; and it is futile to insist upon a definite cleavage between the "physical sciences" on the one hand and the "biological sciences" on the other. Scientific research is more likely to be fruitful if it sets out with the idea of discovering as much unity and interrelatedness as possible, than if it decides beforehand that there are unbridgeable chasms and irreducible differences between the various sciences. Indeed, in recent decades some of the most brilliant work has been done in regions where the special sciences overlap; as in astrophysics, in physical chemistry, in biochemistry, in psychobiology, etc.

Although Mr. Smart insists that there is a difference in principle between the living and the non-living which "no amount of subtle argumentation" can explain away (p. 152), he does not defend the doctrine of the vitalists. In periods of rapid progress in the physical sciences, it is natural to believe that if we just knew enough we should be able to explain biological processes by means of mechanical laws. But "a fuller realization of the amazing complexity and distinctive marks of living things, has led certain contemporary scientists to the view that neither the mechanistic nor the vitalistic theory does justice to the facts" (p. 155). Vital phenomena should be treated "in terms of the basic idea of the organism as a whole." This Mr. Smart would call a "teleological point of view"; but one may question whether General Smuts' adjective "holistic" would not be more appropriate and less conducive to misunderstanding.

In conclusion, although the reviewer is not a pragmatist, he is impelled to add a word in behalf of fair play for this maligned sect. The value of science, or of any particular piece of research, can not be measured by its possibility of application; yet it seems a little far-fetched to insinuate that what vitiated the work of the

alchemists and astrologers was their interest in "prediction and control" (p. 14). It is scarcely necessary to say that astrology and alchemy came to be regarded as pseudo-sciences, not because they were utilitarian in motive, but because their fundamental assumptions did not work.

RAY H. DOTTERER.

THE PENNSYLVANIA STATE COLLEGE.

Selections from Medieval Philosophers. RICHARD MCKEON. New York: Charles Scribner's Sons. Vol. I, From Augustine to Albert the Great. 1929. xx + 375 pp. Vol. II, From Roger Bacon to William of Ockham. 1930. xviii + 515 pp.

In spite of the fact that scholars, the majority of whom have not written in English, have been engaged in the study of medieval philosophical texts since the early part of the last century, little attempt has been made to present their material in a form adapted to the English-speaking student. The manuals of scholastic philosophy and the few treatises on isolated figures, such as St. Thomas, which have been published in English, frequently have imposed upon them some special philosophical or theological coloring, or have been based upon insufficient and false data. What is worse, the Augustinian and Aristotelian terminology, in large measure alien to us, has been left unexplained: too often, the reader's familiarity with the doctrinal context itself has been taken for granted. That such an assumption is to-day scarcely warranted, is patent.

Professor McKeon's two volumes of *Selections from Medieval Philosophers* mark the first attempt to provide an introduction in English to the field of medieval philosophy reasonably free from the defects which have been mentioned above. This is accomplished in part through translations of various texts centering on the problem of knowledge; in part through introductions to each of the texts, through two general introductions (one to each volume), and through a glossary of philosophical terms.

Since, as Professor McKeon tells us, none of the texts had been translated into English previously, it should be proper to speak of them first. The selections extend over a period of some 950 years, for the first translation is taken from St. Augustine, who lived in the fifth century, and the last from William of Ockham, who lived in the fourteenth. The intermediate portions include, among others, such diverse figures as Boethius and Scotus Eriugena, St. Anselm and Peter Abailard, Albert the Great and Roger Bacon, St. Thomas Aquinas and St. Bonaventura, Matthew of Aquasparta and Duns Scotus.

To outline what the problem of knowledge itself is, would appear

to be no difficult task. Boethius makes what seems to be a clear statement concerning it in his introduction to his commentary on the *Isagoge* of Porphyry. This statement of Boethius' is used as a basis for commentary or discussion either directly or as the frame in which the problem is set; i.e., a terminology is provided. None the less, in light of the diverse handling of the problem by the figures in Professor McKeon's selections, one begins to doubt the very identity of the problem. There is the greatest variety in aspect. Sometimes the problem is one with metaphysics and theology, as in St. Augustine, Scotus Eriugena, St. Anselm, Roger Bacon, and St. Bonaventura. Here we see it in the earlier Augustinian tradition. Some times, again, there is a disassociation, and the subject can be treated independently of the others, even though metaphysical assumptions may be implicit, as in St. Thomas. Further, there is the alteration caused by the adoption of a new and more refined scientific terminology. This can be observed not only in such an Aristotelian as St. Thomas, but in such Augustinians as Matthew of Aquasparta and Duns Scotus as well. Here again, it would be difficult to discover that St. Augustine and Duns Scotus are talking about the same thing; in one instance the question is posed in terms of the eternal truth beyond all truths, and the impossibility of any teaching, while in the other there is question of the ground and validity of principles, and of the relation between experience and demonstration. What is the guarantee and evidence of the truth of a proposition. In truth, there is a richness of implication and development in the medievals, and especially in the later figures, rarely to be found in any contemporary philosopher. That this is caused in great part by the familiarity with and use made of a greater store of philosophic material is fairly obvious. Yet it should not be forgotten that these men are the masters and not the slaves of their content. A sign of this is to be observed in the freshness and originality with which the subject-matter is time and again approached.

The interest for the present-day reader, however, is not altogether historical and esthetic; often there is real relevance to contemporary logical and metaphysical discussions. William of Ockham, for example, will be found discussing the relations between propositions and existences, between propositions of science, again, and propositions concerning existences, their dependence upon one another and their relation to the knowing subject, much in the manner, and, one is tempted to remark, almost in the language, of W. E. Johnson. With this difference, that Ockham appears to be much more cognizant of the metaphysical implications and background of his doctrine than Johnson showed himself to be.

Because of the strangeness of terminology, especially in the later

figures, and of the unfamiliarity of the reader with historical context, there might be danger of the material taking on many of the attributes of quaintness and archaeology, for all the actual relevance it would have to the philosophically inclined reader. This is avoided by Professor McKeon in his introductions and glossary. The special introductions each supply in part historical setting, in part philosophic elucidation and interpretation of the text. Those on St. Augustine and St. Bonaventura are especially worthy of note.

The general introduction to the first volume is concerned with some of the characteristics of medieval philosophy in general; with a brief description of scholastic method, and finally, with the problems confronting the translator in such a field. The general introduction to the second volume contains an able defense of medieval method and philosophy, a statement of their relevance to present problems, and a cogent critique of modern prepossessions for identifying some particular mode of approach and aspect with the whole of philosophy. General interpretation is often present, even in the particular introductions, but it is interpretation based upon an induction into the specific subject-matter, not dictated by some outside attitude. Whether or not the reader will always agree with Professor McKeon, at least he will have the material with which to form an opinion of his own.

The glossary is exceedingly valuable, in every case the distinctions and definitions are derived either from Aristotle or from some medieval. In a great many instances the definitions are Thomistic; in a later edition, perhaps, Professor McKeon will introduce variant interpretations drawn from the philosophies of opposing schools.

Both in the introduction to the first volume and in the introduction to the glossary, Professor McKeon has pointed out the difficulties which present themselves to the would-be translator. It may be said that he has surmounted them in admirable fashion. From the aspect of rhetoric alone, there are splendid passages in the selections from St. Augustine and Roger Bacon; but what is more important for the student, the diverse Latin styles of a St. Augustine or a St. Thomas are reproduced with a fidelity to the original which make it quite impossible to believe that they have been accomplished by the same hand.

Undoubtedly, the work, whatever may have been the author's intention, is more than a textbook or anthology. It would be a pity if its use should be limited to the beginner only; even those who are familiar with the field should find text and introduction mutually illuminating. For in its divergence from the set formulae and positivistic attitude fashionable to-day, this work marks a contribution of real significance to American philosophical understanding.

LINCOLN REIS.

TORONTO, CANADA.

Saint Jean de la Croix et le problème de l'expérience mystique. JEAN BARUZI. 2d edition. Paris: Félix Alcan. 1931. Pp. 740.

This remarkable study impresses one at the start by its sheer bulk, and by its wealth of patiently elaborated detail. Its scholarship is characterized by what would ordinarily be called "German" persistence and thoroughness rather than by "French" lucidity and over-simplification. "What a stimulus it must be," one exclaims, "that could evoke such a response from a Frenchman! What strange fascination is it in Saint John of the Cross, which holds a philosophic mind thus entranced, and interests it in the most trifling details of his life and works?"

The answer to this question will not be found in the book. As the author admits (Preface, p. viii), nowhere in all the 740 pages does he pass from hypothesis to certainty sufficiently to give the reader *John of the Cross himself*. It would be well, before attempting to confront the difficulties of this massive piece of scholarship, to go to some other source for a simple portrait of the great Spanish mystic and poet who lies concealed behind this mass of detail. All readers who do not take this precaution should be warned off, as John of the Cross warned all but Carmelites from attempting the "Ascent of Mt. Carmel" with him, or plunging with him into "The Dark Night of the Soul." Rough and steep is the way: first a critical evaluation of the extant texts; then a careful and elaborate piecing together of the scraps of biographical information which enable us to reconstruct a hypothetical portrait of the saint's personality and life; then a painstaking philological examination of the imagery and favorite turns of speech employed in the poetical works, with a view to relating St. John's philosophy of mysticism and his actual mystical experience; then finally (almost half the book), a closely commentated description of the "Mystic Way" as set forth by St. John, from the "initial negation" to the final "theopathic state." In all this wealth of detail, it is very easy not to see the wood for the trees.

Yet the patient reader will find, implied or reflected rather than present in these pages, a figure of peculiar attractiveness, compelling one to revise and enlarge the common definitions of the word "mystic," and reconsider the usual facile explanations of the psychology and epistemology of mysticism. A child of the same Catholic Reformation which produced the "Spiritual Exercises" of St. Ignatius Loyola and the mystical works of St. Theresa (with whom he was closely associated), St. John of the Cross represents a sterner, more metaphysical type of mysticism than will be found in any of the other Spanish mystics. He had a distrust of all subjective self-manipulations and a thirst for objective reality which made

him skeptical of discovering the Divine either in the auto-suggestive vividness of imagery cultivated by St. Ignatius, or in the supernatural visions and delicious swoonings and transverberations so eagerly described by St. Theresa. For St. John, nothing would satisfy save that Absolute One, abiding behind and beyond the changing and the temporal, which has been the goal of the philosophical mystics in India ever since the time of the Upanishads, and the goal of a select few in the West ever since Neo-Platonism introduced a strain of Hinduism into Christian thought. To this supreme good all lesser goods are ruthlessly sacrificed, passing one after another into Nothingness and Night, until only God and the Soul, made perfectly one, remain.

There is always a paradox in Christian mysticism, as contrasted with Hindu mysticism. If acosmic pantheism be adopted as the metaphysical background of mystic experience, then there is nothing to restrain the mystic from pushing to the limit his endeavor to escape from the illusions of sense and the entanglements of earthly affections. If the whole visible universe is a "fleeting show," and my fellow-men are but bubbles, like myself, momentarily appearing and disappearing upon the stream of the One Divine Reality, then there is no reason why I should not escape from the sad dream of life as quickly as possible, and go home forever to Nirvana. For the Christian mystic, however, there is no such easy escape from life's responsibilities. The God with whom he seeks to be united is not the inhabitant of some vast pool of peace, far from the madding crowd and the noises of earth; He is one who, according to the Christian story, made the world and loves it, in spite of human sin; yes, even descends into it, in Christ, in sacrificial concern for the welfare of the least of mortals. World-flight, accordingly, is never the last word with the genuinely Christian mystic—and John of the Cross is of that number. In the "theopathic state," all that concern for the world which was renounced in the initial negative stages of the mystic way, comes back in the shape of a calm, divine compassion and active good-will for the whole world. As Baruzi concludes (pp. 684–685):

> John of the Cross is of the first rank among those mystics who, in the last resort, have accepted the universe. It is not enough to say that he sang (and analyzed) the meeting of God and the Soul, alone with each other. Those very *things* which are at first rejected in the negative stage of the "Dark Night," are reabsorbed in the Soul, discovered in God, and passionately loved in their new-found grandeur. . . . But this God in whom John of the Cross rediscovers the world, is reached by going beyond things and beyond images, to an inner center where He dwells.

Is it too much to claim, with Baruzi, that an experience of such sincerity, depth, and objectivity has real "noëtic" significance, en-

titling it to the respectful attention of metaphysicians? I think not. But if this claim be denied, one may at least quote, without translation, the closing words of the book:

> Mais sans doute n'est-il pas interdit de transposer, à travers le rhythme de l'effort métaphysique, l'amère purification de l'esprit.

WALTER M. HORTON.

OBERLIN COLLEGE.

JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. Vol. XLI, 3. The Contemporary Significance of Hegel's Philosophy: *Sidney Hook.* Hegel's Political Philosophy: *G. H. Sabine.* Hegel's Rationalism: *M. R. Cohen.* Discussion—Idealistic Logic and Philosophical Construction: *R. C. Lodge.*

THE MONIST. Vol. XLII, 2. Probability and Causality in Quantum Physics: *Henry Margenau.* Logic and Scientific Law: *P. A. Carmichael.* Explanation, Science and Forms: *F. P. Boswell.* Fact and Event: *A. Ushenko.* The Unit of Life: *W. C. George.* The Square of Opposition: *E. J. Nelson.* On the Construction of a Logic in which Inclusion has the Meaning of the Species-Genus Relation: *H. B. Smith.* On the Relation of the Aristotelean Algebra to That of Boole-Schroeder: *H. B. Smith.* On the Derivation of Aristotelean Algebra from the Properties of a Hamiltonian Set: *H. B. Smith.* Discussions—Our Knowledge of Physical Objects: *Rasvihary Das.* Professor Lewis' View of our Knowledge of Objects: *O. N. Hillman.* ϕa, ϕx, $\phi \hat{x}$: *Paul Gastwirth.* In Reply to Mr. John B. Kent: *S. Z. Hasan.* Note on the Inconsistency of Aristotelean Logic: *A. Ushenko.*

RIVISTA DI FILOSOFIA. Anno XXIII, 2. La nostra inquietudine: *E. Morselli.* Il problema del rapporto fra le anime individuali e l'anima divina dell'universo nella filosofia di Plotino: *G. Capone Braga.* Sul valore della distinzione fra legge e norma: *C. Goretti.* Il problema filosofico del ritorno al pensiero antico: *E. Grassi.*

GIORNALE CRITICO DELLA FILOSOFIA ITALIANA. Anno XII, Fasc. VI. La scepsi platonica (contin. e fine): *Luigi Stefanini.* L'origine dell'anima umana secondo Dante: *Bruno Nardi.* La filosofia mistica di F. H. Jacobi (cont.): *Bianca Magnino.* *Anno XIII, Fasc. 1.* Il caratere della filosofia tomistica (cont.): *Giuseppe Saitta.* Introduzione alla storia della logica antica: *Guido Calogero.* L'origine dell'anima umana secondo Dante (cont.): *Bruno Nardi.* La filosofia mistica di F. H. Jacobi (cont.): *Bianca Magnino.*

Cassirer, Heinrich: Aristoteles' Schrift "Von der Seele" und ihre Stellung innerhalb der aristotelischen Philosophie. (Heidel-

berger Abhandlungen zur Philosophie und ihrer Geschichte.) Tübingen: J. C. B. Mohr (Paul Siebeck). 1932. 198 s. 10.20 M.

Dawson, Miles Meander: The Wisdom of Confucius. A Collection of the Ethical Sayings of Confucius and of His Disciples. Boston: International Pocket Library. 63 pp. $.25.

Jacobus Acontius Tractaat De Methodo. Met een Inleiding Uitgegeven door Herman J. De Vleeschauwer. (Universiteit te Gent. Werken Uitgegeveen door de Faculteit der Wijsgeerte en Letteren.) 67e Aflevering.) Paris: Edouard Champion. 1932. Antwerpen: "De Sikkel." 205 pp.

Jerusalem, Wilhelm: An Introduction to Philosophy. Authorized translation (from 10th edition, revised and enlarged) by Charles F. Sanders. Revised edition. New York: Macmillan Co. 1932. xvii + 526 pp. $2.50.

Warrain, Francis: L'Oeuvre Psychobiophysique de Charles Henry. Paris: Librairie Gallimard. 1931. 551 pp.

NOTES AND NEWS

We regret to announce that Professor Ralph Monroe Eaton of Harvard University died on April 13, 1932. He had been Assistant Professor of Philosophy and Tutor at Harvard since 1926, and was the author of *Symbolism and Truth* (1925) and *General Logic* (1931). He was also editor of *Selections from Descartes* in the Modern Students Library (1927) and translated and wrote a preface for *Secret Ways of the Mind* by W. M. Kranefeldt, with an Introduction by C. C. Jung (1932).

C. Cornelius Benjamin of the University of Illinois will go to the University of Chicago at the beginning of the next academic year as Assistant Professor of Philosophy.

Professor E. G. Spaulding, President of the Eastern Division of the American Philosophical Association, has appointed the following Committee to coöperate with the Eighth International Congress which meets in Prague in 1934: Professor A. C. Armstrong, Honorary Secretary, Professor J. J. Coss, Secretary *pro tem.*, and Professors G. P. Adams, E. B. McGilvary, W. P. Montague, R. B. Perry, George Rebec, and W. M. Urban.